

553,050

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property
Organization
International Bureau



(43) International Publication Date
28 October 2004 (28.10.2004)

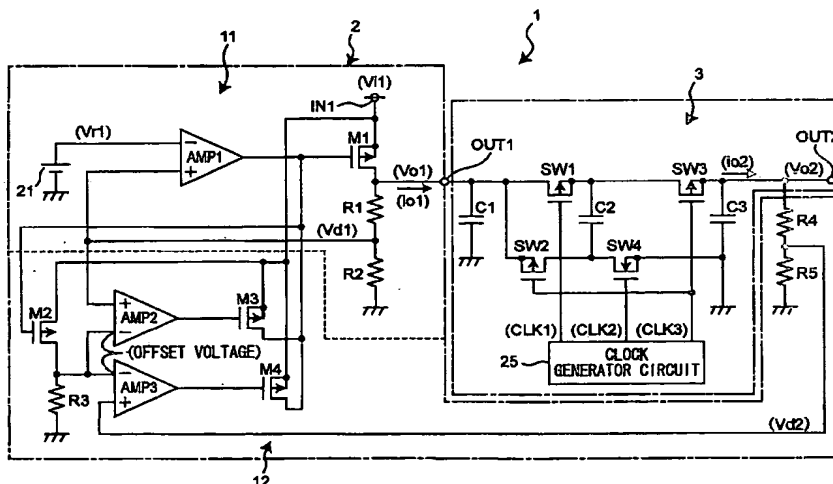
PCT

(10) International Publication Number
WO 2004/093304 A1

- (51) International Patent Classification⁷: **H02M 3/07**, G05F 1/56
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- (21) International Application Number: PCT/JP2004/005236
- (22) International Filing Date: 13 April 2004 (13.04.2004)
- (25) Filing Language: English
- (26) Publication Language: English
- (30) Priority Data: 2003-109217 14 April 2003 (14.04.2003) JP
- (81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.
- (84) Designated States (unless otherwise indicated, for every kind of regional protection available): ARIPO (BW, GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).
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- Published:
— with international search report

[Continued on next page]

(54) Title: DC-DC CONVERTER



(57) Abstract: A DC-DC converter is disclosed that includes a constant voltage circuit outputting a first voltage, a charge pump circuit outputting a second voltage, a current detection circuit converting the output current of the constant voltage circuit into a third voltage and outputting the third voltage, a first detection circuit detecting the first voltage and outputting a first detection voltage proportional thereto, a first overcurrent protection circuit comparing the third voltage and the first detection voltage and reducing the output first voltage and current of the constant voltage circuit when the third voltage exceeds the first detection voltage, a second detection circuit detecting the second voltage and outputting a second detection voltage proportional thereto, and a second overcurrent protection circuit comparing the third voltage and the second detection voltage and reducing the output first voltage and current of the constant voltage circuit when the third voltage exceeds the second detection voltage.

WO 2004/093304 A1



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